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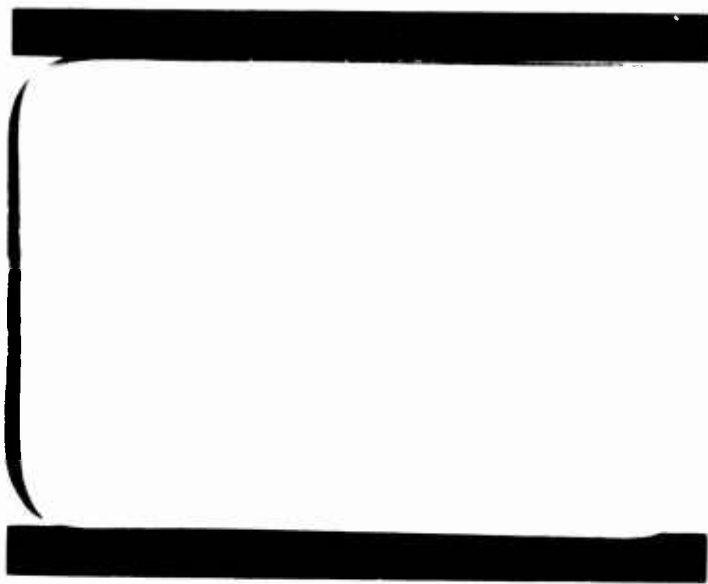
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A2136 1 (REV 6-61)

AD 844036

MERCURY
FLIGHT SUMMARY
FOR
MAJOR CRITICAL COMPONENTS
AIRBORNE EQUIPMENT

AE61-0512-7

1 DECEMBER 1961

GENERAL DYNAMICS/ASTRONAUTICS

PREPARED BY SYSTEMS ENGINEERING

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G. W. Conrey	564-10	H. H. Mishler	342-10
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REFERENCES

- (a) AFMBO letter MCPTC:JMP:law, PRO 13, dated 29 January 1958, Subject: "Contract AF04(645)-4. Environmental Requirements and Test Procedures for WS 107A-1 Equipments. Convair Specification 7-00210 dated 15 October 1957"
- (b) Convair letter MR:OCP:emp, 531-3015, dated 22 November 1957. Subject: "Contract AF04(645)-4, Environmental Testing of Convair Furnished Equipment"
- (c) Convair Specification 7-00209B, dated 1 March 1958, Addendum I, dated 5 January 1961, "Environmental Design Conditions and Environmental Test Procedures for WS 107A-1 Equipments"
- (d) Convair Specification 7-00210B, dated 1 May 1958, "Environmental Requirements and Test Procedures for WS 107A-1 Equipments"
- (e) Contract AF04(647)-699, CCN 70; Sales Order 89-1-71.
- (f) Contract AF04(647)-635, CCN 85; Sales Order 92-1-79.
- (g) Contract AF04(647)-299, CCN 721; Sales Order 11-1-577.
- (h) AZR-27-001, Test Status Report.

1.0 OBJECTIVE

This report presents the qualification or approval status of major critical components on the Mercury portion of WS107A-1. All components are operating, non-standard, airborne CFE components.

This report is submitted in compliance with:

- S.O. 11-1-577, CCN 721 of contract AF04(647)-299
- S.O. 92-1-79, CCN 85 of contract AF04(647)-635
- S.O. 89-1-71, CCN 70 of contract AF04(647)-699

2.0 SUMMARY

There are 142 major critical components included in this report. One hundred-thirty-four (134) are subject to qualification testing. The test status of components subject to test are as follows:

Qualified by

PPT	45	
FPT	8	
BOS	46	
Oth		
Evaluation Tests (Modified Commercial Parts)	8	
Similarity to qualified units plus additional tests	20	
Total qualified		127

To be qualified by

PPT	4	
FPT	0	
BOS	2	
Oth		
Similarity to qualified units plus additional tests	0	
Total to be qualified		6

Not to be used

Rejected for Missile use (Design not acceptable)	1	
Additional testing required	0	
Total not to be used		— 1
Total subject to test		134

2.1 No additional types of components have been added in this issue.

3.0 CODING

Column entries in the summary sheets reflect pertinent information as described in paragraph 3.1 through paragraph 3.8.

3.1 PART NUMBER Column

Part numbers, specification numbers, and vendors name are listed in the order indicated in the column heading. If a number is not applicable or a number has not been assigned, dashes will be entered to indicate such omission and maintain descending continuity.

3.2 EFFECTIVITY Column

The effectivity of the listed part is indicated by the manufacturing sequence numbers for Mercury boosters.

3.3 NOMENCLATURE Column

Nomenclature will be that appearing on the contractor's release records or drawings.

A QCDI entry in the lower part of the column indicates the item is listed in the current issue of Departmental Instruction 141-0-92, Quality Assurance Provisions Mercury Pilot Safety Program.

3.4 MAD APPR Columns

Current CCN's do not require these entries and the entries are deleted. Column headings are deleted from the revised form. When significant changes are made on a page, the revised form will be utilized.

3.5 CRIT COMP Column

This entry is replaced by a QCDI entry in the NOMENCLATURE column. (Refer to paragraph 3.3.) The column heading is deleted from the revised form. When significant changes are made on a page, the revised form will be used.

3.6 QUAL BY Column

Entries in the QUAL BY column indicate the method by which the item is qualified. A "PPT" entry indicates that the item was or will be qualified by preproduction tests in accordance with Convair Specification 7-00209B. A "BOS" entry indicates that the item was or will be qualified on the basis of similarity to a previously-qualified item. An "FPT" entry indicates that the item was or will be flight proof tested in accordance with Convair Specification 7-00210B. An "OTH" entry indicates that the item was or will be qualified by means other than those given above.

3.7 TEST SCHED Column

Column entries indicate requirements for test schedules; they do not indicate requirements for testing. "Date" entries in the column indicate time spans for the test schedules. "Completed" entries indicate the test schedules are complete. "Not required" entries indicate schedules are not required; the entries do not indicate tests are not required since qualification may be demonstrated by similarity to previously qualified items or by another manner of qualification.

3.8 REVISION/ADDITION CODING

A horizontal bar in the lower margin of a page indicates the page is new or revised for the current issue of the report. See example at bottom of this page.

MERCURY
MAJOR CRITICAL COMPONENTS
HYDRAULICS

There are 30 major critical components included in this section. Seventeen units were preproduction tested, one unit is not for missile use, and ten units were approved based on similarity to preproduction tested units and nine of the ten received some additional testing. Two other units will also be approved based on similarity to preproduction tested units, but still require some additional testing.

The 27-08573-1 actuator cylinder manufactured by the Bohanan company will not be used on any missiles because of inherent structural weaknesses. The actuator was included in the basic issue of this report in compliance with references e, f, and g.

The 27-08569-1 valve was preproduction tested, but because of unstable operation in other tests, the valve is being subjected to a revised IAT procedure. See Note.

The 27-08573-3 and 27-08574-801 vernier servo cylinders, manufactured by Clemco, have successfully passed first level search-for-critical-weakness tests and PET tests and are considered by the Design Group to be satisfactory for flight use.

NOTE

The 27-08569-1, and 27-08561-1 relief valves, 27-08590-1, -3 sustainer hydraulic pumps have failed recent tests. Before any of these units are released for flight, Hydraulic Design or Systems Engineering Groups must be contacted for most recent information. See individual components listed in this section for additional information.

MERCURY TEST SUMMARY					HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	QUALIFIED BY	REMARKS	TEST SCHEDULE	
					START	COMPL
27-08550-5 27-08550J 27-04202K Moog Valve M-7773	100D Only	Servo Cylinder - Booster Hydraulic	BOS	<p>(12-61)</p> <p>Approved based on similarity to 27-08550-1, which was preproduction tested and reported in Moog Report No. MR-322. The 27-08550-5 was approved on VAF MC 29093 dated 6-26-59.</p> <p>NOTE</p> <p>1. This unit reworked to a 27-87066-1 servo cylinder by service action which replaced the integral filter and servo valve orifice plate.</p> <p>2. This unit is not to be used on Mercury vehicles.</p>	Complete	June 1959

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDE	INSTL				Complete	Sept. 1959	
27-08550-7 27-08550K 27-04202K Hydraulic Research Mfg. 104700-1	77D 82D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Servo Cylinder - Booster					Oth	(5-61) (10-61) The 27-08550-7 Servo-Cylinder was qualified based on similarity to the 27-08550-1 which was preproduction tested to basic specification and by additional testing as required. Additional testing is reported in ETL reports, number 7A2311 and 7A576. The basic differences between the -7 and the -1 are minor bleed port changes and a locking device which was functionally evaluated and tested in the -7 cylinder. Specification was revised to K revision. Difference between specification 27-04202K and the basic specification required additional testing on the transducer which is a sub-component of the cylinder assembly. The test has been completed and reported in Collins test report P/N 104723; report is currently being reviewed by servo-mechanism design group. GD/A design group approved PPT on VAF MC 36974, dated 9-8-59.	Complete	Sept. 1959	
		QC DI									

MERCURY TEST SUMMARY				HYDRAULICS			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			REMARKS	TEST SCHED START COMPL
			ENGR	IDE	INSTL		
27-08551-3	77D	Tank - Hydraulic Fluid				(6-61) Three units S/N 1, 2, and 3 of 27-08551-3 were preproduction tested and reported in Wyle Lab Test Report 5840, Addendum I, II, and III. GD/A design group approved PPT on 27-08551-3 in VAF MC 21925 dated 10-31-58.	Completed Oct. 1958
27-08551G	88D	Booster, Type III					
27-08503C	93D						
BenBow-Pantex	100D						
8985	103D						
	107D						
	109D						
	113D						
	130D						
	144D						
	152D						
	167D						
		QC DI					

MERCURY TEST SUMMARY					HYDRAULICS				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	APPR				START	COMPL
27-08552-5	77D	Tank - Hydraulic Fluid,				PPT	(6-61)	Completed	March 1960
27-08552H	88D	Sustainer, Type II					Two units of 27-08552-5 were Preproduction tested to 27-08504C Specification. Results were reported in Wyle Labs Test Report 8188 Addendum I.		
27-08504C	93D								
BenBow-Pantex	100D								
8983E	103D								
	107D								
	109D								
	113D								
	130D								
	144D								
	152D								
	167D								
27-08552		QC DI					GD/A design group approved PPT on 27-08552-5 in VAF 45313 dated 3-7-60.		

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			APPR	INSTL	ENGR				START	COMPL	
27-08553-3 27-08553G 27-08507D Peacock Engineering 51305-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Accumulator - Hydraulic, Sustainer					PPT	(5/61) The 27-08553-3 accumulator was qualified by PPT's conducted on two-units S/N IX and 2X by the Wyle Labs. The PPT data and additional test requirements were included in Wyle Lab reports 5845, ADD I, II, and III. CV/A design group approved PPT in VAFS 45857 and 27813 dated 2-23-60.	Completed March 1959		
		QCDI									

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	INSTL				START	COMPL	
27-08554-3 27-08554F 27-08506D Peacock Engineering 51310-3	77D 88D 100D 103D 107D 109D 113D 130D 144D 152D 167D 93D	Accumulator-Hydraulic Booster					PPT	(5-61)(10-61) The 27-08554-3 accumulator was qualified by PPT's conducted on two units S/N X1 and X2 by the Wyle Lab. The PPT data is recorded in reports 5844, Addendum II, dated 8-26-58 and 5844, Addendum III, dated 3-18-59. GD/A design approved PPT in VAF MC 27885 dated 2-24-59. <u>NOTE</u> 1. Unit has an in-service history of precharge gas pressure leakage past the piston and into the hydraulic system. 2. Unit is being investigated for possible redesign action to prevent this leakage in future installations.	Complete March 1959		
		QCDI									

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDR	INSTL				START	COMPL	
27-08555-1 27-08555D 27-08511A Peacock Engrg. 51285-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Staging, Hydraulic Return					PPT	(6-61) Two units S/N 1 and 2 of 27-08555-1 were preproduction tested to 27-08511 Specification and reported in Wyle Test Lab Memo dated 10-15-58, Report 5961 dated 9-26-58 and TR5841 Addendum I, II, and III. PPT was approved on VAF MC 21559 dated 10-23-58. Specification was revised to A revision. Specification 27-08511A differs from the basic specification in that the revised specification incorporates maximum weight of the valve and revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit. Unit is mounted on the booster section, used for sustainer hydraulic system.	Completed Oct. 1958		
		QCDI									

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			QUAL BY	REMARKS	TEST SCHED			
			ENGR	IDF	APPR			INSTL	START	COMPL	
27-08555-3	77D	Coupling Assembly -				PPT	(6-61)(10-61)	Completed	Nov.	1958	
27-08555D	88D	Staging, Hydraulic					Two units of 27-08555-3 were prepro-				
27-08511C	93D	Return					duction tested to 27-08511A specifica-				
Peacock	100D						tion and reported in Wyle Test Report				
Engineering	103D						5841 (Add I, II and III).				
51285-3	107D						GD/A Design Group approved PPT of 27-				
	109D						08555-3 in VAF MC 21560, dated 10-23-58.				
	113D						Specification was revised to C revision.				
	130D						Specification 27-08511C differs from the				
	144D						A revision in that B and C incorporate				
	152D						maximum weight of the valve and revised				
	167D						procedure for proof cycle test. These				
							revisions have been tested in later PET's				
							of this unit.				
							Unit is mounted on the sustainer section				
							and is used for the sustainer hydraulic				
							system.				
		QCDI									

27-08555

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	INSTL				START	COMPL	
27-08574-801	77D	Cylinder - Actuating,					BOS	(10-61)	See		
27-08574	93D	Vernier Hydraulic,						Approved based on similarity to 27-08574-1	Remarks		
27-08519C	103D	Yaw						and 7-08283-3, except that the 27-08574-			
Clemco	107D							801 design requirements specify nickel			
	109D							plated 4130 steel for the cylinder body,			
	113D							and chrome plated 17-4 Ph stainless steel			
	130D							for the piston.			
	144D										
	152D										
	167D										
<p style="text-align: center;"><u>NOTE</u></p> <p>1. This unit has recently passed search- for-critical-weakness and PET tests. Complete re-qualification of this unit is not planned because this de- sign is similar to 7-08283-3, except for hi-temperature O-rings and material change, as indicated above.</p>											

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDE	INSTL						
27-08556-3 27-08556D 27-08511C Peacock Engrg. 51290-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Staging, Hydraulic Pressure					PPT	(6-61) Two units S/N 1 and 2 of 27-08556-3 were preproduction tested to 27-08511A specification and reported in Wyle Test Report 5842 Addendum I, II, and III. GD/A design group approved PPT on 27-08556-3 in VAF 21562 dated 10-23-58. Specification was revised to C revision. Specification 27-08511C differs from the A revision in that B and C incorporates maximum weight of the valve and revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit. Unit is mounted on the sustainer section and is used for the sustainer hydraulic system.	Completed Oct. 1958		
27-08556		QCDI									

MERCURY TEST SUMMARY										
HYDRAULICS										
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDR	APPE				START	COMPL
27-08556-5 27-08556D 27-08511C Peacock Engrg. 51290-5	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Staging, Hydraulic Pressure					0th	(6-61) (10-61) The 27-08556-5 was approved based on similarity to the -1 and -3, which were pre-production tested to specification 27-08511A, with additional tests as required and reported in Wyle Lab report 5842. The -5 differed from the -1 in that a check valve was eliminated from the -5 valve to make it compatible to the system. This coupling replaces the 27-08566-1 coupling. GD/A design group approved PPT on 27-08556-5 in VAF MC 43858 dated 3-4-60. Specification was revised to C revision. Specification 27-08511C differs from the A revision in that B and C incorporates maximum weight of the valve and revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit.	Complete March 1960	
		QCDI						Unit is mounted on the Booster section and is used for the sustainer hydraulic system.		

MERCURY TEST SUMMARY					HYDRAULICS					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL				START	COMPL
27-08557-1 27-08557 27-08510C Peacock Engrg. 51295-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Rise-Off, Hydraulic Return					PPT	(6-61) (10-61) The unit was preproduction tested to "A" revision of the specification and reported in TR #5872. GD/A Design Group approved the unit on VAF 21967 dated 11-1-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other verbal (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness tests on 4-9-59 and PET's on 5-3-60.	Completed Nov. 1958	
27-08557		QC DI						Unit is mounted on the launcher and is used for the booster hydraulic system.		

HYDRAULICS										
MERCURY TEST SUMMARY										
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL				START	COMPL
27-08557-3 27-08557 27-08510C Peacock Engrg. 51295-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Rise-Off, Hydraulic Return					PPT	(6-61) (10-61) The 27-08604-3 coupling was preproduction tested to specification 27-08510A and the results were reported in TR 194 on test specimen S/N 002 and 003. GD/A design group approved the tes ing on VAF MC 35157 dated 7-22-59. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was in-creased to reflect the actual unit and several other verbal (minor) changes not affecting design or test requirements. Unit is mounted on the booster and is used for the booster hydraulic section. This unit passed search-for-critical-weakness test on 4-9-59 and PET on 4-13-60.	Complete Aug. 1959	
		QC DI								

MERCURY TEST SUMMARY					HYDRAULICS				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	INSTL				START	COMPL
27-08558-1 27-08558 27-08510C Peacock Engrg. 51300-1	77D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D 88D	Coupling Assembly - Rise-off, Hydraulic Pressure				PPT	(6-61) (10-61) The 27-08558-1 unit was preproduction tested to specification 27-08510A and reported in test report 5873, Addendum III. GL/A design group approved the unit on VAF 23795 and 23796, dated 12-10-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other verbal (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness test on 3-9-61 and PET on 5-3-60. Unit is mounted on the launcher and is used for the booster hydraulic system.	Completed Dec. 1958	
27-08558		QCDI							

MERCURY TEST SUMMARY				HYDRAULICS			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
							START COMPL
27-08558-3 27-08558 27-08510C Peacock Engrg. 51300-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Rise-off, Hydraulic Pressure	ENGR IDE INSTL		PPT	(6-61) The 27-08558-3 unit was preproduction tested to specification 27-08510A. The data is presented in test report 5873, Addendum III. GD/A design group approved the unit on VAF 23795 and 23796 dated 12-10-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other verbal (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness tests on 4-9-59 and PET on 10-19-60.	Completed Dec. 1958
		QC DI				Unit is mounted on the booster section and is used for the sustainer hydraulic system.	

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	INSTL				START	COMPL	
27-08561-1 27-08561D 27-08501B Vinson A-80282	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve - Safety, Hydraulic, Relief, Booster					PPT	(10-61) This item was preproduction tested and results presented in Vinson test report No. QTR-80282, Addendum I, and Garwood Lab report No. 1588. GD/A design group approved the 27-08561-1 valve in VAF 39330, dated 10-21-59. <u>NOTE</u> Investigation of recent PLT test failures have disclosed that material problems may have caused the scoring of body and valve poppet. Several units have since had the poppets hard chrome plated and are now being tested to determine if the problem is resolved.	Complete Oct. 1959		

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	INSTL	IDE						
27-08563-5 27-08563F 27-08516D Interstate Engrg. and Clemco 2725-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Hydraulic, Sustainer Pitch					0th	(10-61) The 27-08563-5 cylinder was approved based on similarity to 7-08286 which was preproduction tested and reported in Wyle lab report 4547, Addendum A. Cylinder 27-08563-5 differs from the 7-08286 in that 27-08563-5 has a larger diameter piston orifice and uses hi-temperature 0-rings. The 27-08563-5 passed search-for-critical-weakness tests on 9 December 1959. PET tests were completed in April 1961 and included temperature, vibration, life, and burst tests to specification 27-08516D requirements. GD/A design group approved the 27-08563-5 on VAF 23585 on 12-12-59.	Complete Dec. 1959		
27-08563											

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDE	INSTL						
27-08563-3 27-08563F 27-08516D Interstate Engrg. and Clemco 2425-103	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Hydraulic, Sustainer, Yaw					0th	(6-61) (10-61) The 27-08563-3 cylinder was approved based on similarity to 7-08286 which was preproduction tested, plus additional tests reported in TR 4547. The 27-08563-3 cylinder differs from the 7-08286 in that the 27-08563-3 cylinder uses hi-temperature O-rings and diameter of hole size in piston orifice is larger. The 27-08563-3 passed search-for-critical weakness tests on 12-9-59. PET tests were completed in February 1960 and included temperature, vibration, life, and burst tests to specification 27-08516D requirements. GD/A design group approved the 27-08563-3 specification 27-08516 on VAF MC 25585 dated 12-6-58. Same additional tests shown under 27-08563-5, except that PET's were completed in February 1960.	Complete March 1959		
		QCDI									

MERCURY TEST SUMMARY				HYDRAULICS			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
							START COMPL
27-08564-5	77D	Filter - Fluid.			PPT	(6-61) (10-61)	Completed
27-08564	88D	Pressure, Hydraulic				The 27-08564-5 filter was preproduction tested and the test data presented in test report 2417A.	Sent.
27-08512D	93D					GD/A design group approved the filter tests on VAF MC52493 and MC55425 dated 9-12-60.	1960
64987	100D					Filter is used as in-line pressure filter for vernier servo cylinders.	
Purolator	105D						
Products	107D						
	109D						
	113D						
	130D						
	144D						
	152D						
	167D						
						<p><u>NOTE</u></p> <p>The 27-08564-5 filter was tested to C revision of specification; an additional test, bubble coefficient, is being conducted to satisfy the D revision.</p>	
		QCDI					

HYDRAULICS									
MERCURY TEST SUMMARY									
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	APPR			START	COMPL
27-08564-803 27-08564A 27-08512D Purolator Products 64988-1	103D 107D 109D 113D 130D 144D 152D 167D	Filter - Fluid, Hydraulic System, Missileborne				0th	(6-61) (10-61) The 27-08564-803 filter was approved based on similarity to 27-08564-5 and -801, which were preproduction tested, plus additional tests presented in report 2417. The 27-08564-803 filter differs from the -5 and -801 filters in that the -803 uses a weldable aluminum case to mount the filter instead of the 2024T4 used in the -5 and -801. GD/A design group approved the 27-08564-803, specification 27-08512C, on VAF 27-08564-803 LA 001 dated 5-9-61. Additional tests, bubble coefficient, are being conducted to satisfy D revision of the specification. Filter is mounted on the sustainer servo cylinder pressure inlet. RAU 92-10-617, dated 7-6-60, references ECP 529 which recommends the replacement of the 27-08564-801 with 27-08564-803 filter which is made of 6061 aluminum alloy. Effectivity was for all hardware still in existence; therefore it picked up 77D, 88D, 93D, and 100D effectivity for the -803 filter.	Complete May 1961	
		QCDI							

MERCURY TEST SUMMARY					HYDRAULICS		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD		QUAL BY	REMARKS	TEST SCHED START COMPL
			APPR	ENGR			
27-08573-1	77D	Cylinder - Actuator,			0th	(5/61) (10-61)	Completed Oct. 1958
27-08573B	88D	Hydraulic, Inboard				The 27-08573-1 vernier actuating cylinder was qualified based on similarity to the 7-08243 actuating cylinder which was preproduction tested, and by additional tests per paragraph 4.4.1, 4.4.2, and 4.4.3 of the procurement specification 27-08519C. Additional tests are reported in test letter No. 9224 and TR No. 348.	
27-08519C	93D	Vernier Pitch-roll					
Interstate	100D						
2792-1	103D						
	107D						
	109D						
	113D						
	130D						
	144D						
	152D						
	167D						
						The 27-08573-1 unit was similar to the 7-08243-1 except that the 27-08573-1 units used high temperature O-rings.	
						GD/A design group approved the 27-08573-1 on VAF MC 21809 dated 10-29-58.	
		QC DI					

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDR	INSTL						
27-08573-1 27-08573B 27-08519C Bohanan Co. 50006-001	Not to be used	Cylinder -Actuator, Hydraulic, Inboard						(5-61) Bohanan actuator not to be used on any missile. Unit design has been rejected. Clemco (Interstate) is the only acceptable actuator. Refer to Interstate 27-08573-1 and Clemco 27-08573-3 in this section.			

27-08573

MERCURY TEST SUMMARY				HYDRAULICS			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			REMARKS	TEST SCHED START COMPL
			ENGR	TEST	CRIT COMP		
27-08574-1 27-08574D 27-08519C Interstate 2778-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Actuator, Hydraulic, Outboard Vernier Yaw				(5/61) (10-61) The 27-08574-1 Vernier actuating cylinder was qualified based on similarity to the 7-08283-3 actuating cylinder, which was preproduction tested, and additional tests, paragraph 4.4.1, 4.4.3 of the procurement specification 27-08519C. Additional tests were reported in test letter report No. 9224-1. The 27-08574-1 unit is similar to the 7-08283-3 unit except the 27-08574-1 units use hi-temp O-rings. GD/A design group approved the 27-08574-1 on VAF MC 21808 dated 10-29-58.	Completed Oct. 1958
		QC DI					

MERCURY TEST SUMMARY										HYDRAULICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	INSTL				START	COMPL	
27-08590-1 27-08590A 27-08529C Vickers Inc. AA60401-L-2	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Pump - Axial Piston, Hydraulic, Sustainer					PPT	(5/61)(10-61) The 27-08590-1 pump was qualified by PPT conducted on three units (S/N MX 15984, MX 15983, MX 15985) by the CV-A ETL Labs to the basic specification. The PPT data are recorded in Report Number 7A2063, dated 7-29-59. CV/A design approved PPT by VAF 40786, dated 11-23-59. Investigation of recent test failures of the unit have shown that casting flaws in the pump housing are resulting in pump mounting base failures. Units are being X-Rayed and Xyglo inspected to determine which pumps are acceptable for flight.	Completed Nov. 1959		
									<p align="center"><u>NOTE</u></p> <p>1. Prior to flight, the hydraulic design group MUST BE CONTACTED FOR MOST RECENT INFORMATION.</p>		
									QC DI		

HYDRAULICS									
MERCURY TEST SUMMARY				HYDRAULICS			TEST SCHED		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD		CRIT COMP	QUAL BY	REMARKS	START COMPL	
			APPR	ENGR					
27-85314-817	77D	Sustainer Servo				0th	(10-61) The 27-85314-817 sustainer servo cylinder assembly consists of a 27-08563-3 servo cylinder, 27-04208-1 servo valve, and 27-08564-803 filter.	Complete	May 1961
- - - - -	88D	Cylinder Assembly					The -817 replaced the 27-85314-811 assembly which utilized the 27-08564-801 filter which was subject to body cracks during vibration tests. RAR 92-10-617 dated 7-6-60, ECP 529 removed the -801 filters from all D and E series missiles still in existence.		
- - - - -	93D	Yaw							
- - - - -	100D								
GD/A	103D								
- - - - -	107D								
- - - - -	109D								
- - - - -	113D								
- - - - -	130D								
- - - - -	144D								
- - - - -	152D								
- - - - -	167D								
							NOTE		
							1. For qualification of individual components listed above, see the components listed in Hydraulic and Auto-pilot Sections.		
							2. Release records show a -811 assembly as being effective for 77D, 88D, 93D, and 100D, although 88D and 100D were flown with 27-08564-803 filters, which were replaced at AMR/RAR mentioned above. Missiles 93D and 77D will also be modified to use the -803 filter, but again, the installation dash number, as in 88D and 100D, need not be reidentified for just a paperwork change.		
							QCDI		

MERCURY TEST SUMMARY										HYDRAULICS					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY		NOMENCLATURE		MAD APPR ENGR INSTL		CRIT COMP		QUAL BY		REMARKS		TEST SCHED START COMPL	
27-85314-819		77D		Sustainer Servo						0th		(10-61)		Complete	
- - - - -		88D		Cylinder Assembly								The 27-85314-819 sustainer cylinder assembly consists of a 27-08563-5 servo cylinder, 27-04208-1 servo valve and 27-08564-803 filter.		May 1961	
- - - - -		93D		Pitch								The -819 replaced the 27-85314-813 assembly which utilized the 27-08564-801 filter. The 27-08564-801 filter was subject to body cracks during vibration tests and were replaced by RAR 92-10-617 action dated 7-6-60, ECP 529 removed the -801 filters from all D and E series missiles still in existence.			
GD/A		100D													
- - - - -		103D													
		107D													
		109D													
		113D													
		130D													
		144D													
		152D													
		167D													
<p style="text-align: center;"><u>NOTE</u></p> <p>1. For qualification of individual components listed above, see the components listed in Hydraulics and Auto-pilot Sections.</p> <p>2. Release records show a -813 assembly as being effective for 77D, 88D, 93D, and 100D, but 88D and 100D were flown with 27-08564-803 filters which were replaced at AMR/RAR, mentioned above. This assembly replacement changed the -813 assembly to -819. Missiles 93D and 77D will also use the -803 filter, but again, the installation dash number, as in 88D and 100D, need not be re-identified for just a paperwork change.</p>															

HYDRAULICS										
MERCURY TEST SUMMARY										
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	ENGR	IDE	INSTL	MAD APPE	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
										START COMPL
27-08573-3 27-08573 27-08519C Clemco	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Actuating, Vernier Hydraulic, Pitch-Roll						BOS	(10-61) Approved based on similarity to the 27-08573-1 and 7-08243 units, which were pre-production tested, except that the 27-08573-3 design requirements specify nickel plated 4130 steel for the cylinder body and chrome plated 17-4 Ph stainless steel for the piston. <u>NOTE</u>	See Remarks
									This unit has successfully passed first level search-for-critical-weakness tests and PET tests. It is now considered, by the design group, to be satisfactory for flight use. At the present time no additional qualification testing is planned; since this design is similar to 7-08243 and 27-08573-1, except that high temperature O-rings are used and material change, as indicated.	

MERCURY

MAJOR CRITICAL COMPONENTS

PNEUMATICS

All pneumatic major critical components have been approved. Two components, 27-08020-3 and 27-08116-11, were approved on the basis of similarity to other components which had been preproduction tested. The other components were preproduction tested.

MERCURY TEST SUMMARY										PNEUMATICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	INSTL				START	COMPL	
27-08020-3	77D	Valve Assembly, LO ₂					BOS	(5-61)	Completed	March 1961	
7-08020A	88D	Tank, Relief and						The 27-08020-3 valve was approved on the basis of similarity to 27-08020-1 per VAF 27-08020-3-LA-002, dated 3-17-61. The			
7-08204 N	93D	Shutoff						GD/A Design Group approved flight proof testing of 27-08020-1 per Wyle Lab. Report number 9305 in VAF 27-08020-1-LA-002, dated 12-12-60.			
Peacock Engineering	100D							Flight proof testing consisted of:			
R-50502-105	103D							1. Temperature			
	107D							2. Vibration to 6G			
	109D							3. Life			
	113D							4. Proof Pressure			
	130D							5. Acceleration			
	144D							One sample of the 27-08020-1 was tested.			
	152D							The valves differ only in mounting flange configuration.			
	167D							(11-6j)			
								Item was approved per revision M of the specification. Present specification is revision N. The N revision added vendor and vendor part numbers.			
		QC DI									

MERCURY TEST SUMMARY										PNEUMATICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
				ENGR	IDE	INSTL				START	COMPL
27-08103-3		77D	Valve-Pressure Relief,					PPT	(5/61)	Completed	Dec. 1959
- - - -		88D	Oxidizer Tank						The 27-08103-3 valve was preproduction tested and results reported in Test Report 1078.		
27-08103E		93D							GD/A design group approved the 27-08103-3 valve in VAF MC 34447, dated 10-2-59.		
B. H. Hadley Co.		100D							Three samples were tested.		
10525-5		103D							(11-61)		
		107D							Item was tested to D revision of the Specification. Present specification is revision E. The E revision added vendor and vendor part number.		
		109D									
		113D									
		130D									
		114D									
		152D									
		167D									
27-08103			QC DI								

MERCURY TEST SUMMARY				PNEUMATICS					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			QUAL BY	REMARKS	TEST SCHED	
			APPR	ENGR	INSTL			START	COMPL
27-08104-3	77D	Valve - Pressure				PPT	(5/61)	Completed	Oct. 1959
- - -	88D	Relief, Fuel Tank							
27-08104D	93D						The 27-08104-3 valve was preproduction tested. Results were reported in Test Report number 1079.		
B. H. Hadley Co.	100D						GD/A design group approved the 27-08104-3 /Specification 27-08104C in VAF MC 38418, dated 10-2-59.		
10526-5	103D						Three samples were tested.		
	107D						(11-61)		
	109D						Item was tested to C revision of the specification. Present specification is revision D. The D revision added vendor and vendor part number.		
	113D								
	130D								
	144D								
	152D								
	167D								
		QC DI							

MERCURY TEST SUMMARY										PNEUMATICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	APPR				START	COMPL	
27-08109-1 - - - - 27-08109D Crescent Engrg. B9-5001	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer - Differential Pressure					PPT	(5-61) The 27-08109-1 transducer was preproduction tested (Reports 25-227 and 25-227, Addendum I). GD/A design group approved the 27-08109-1 unit tests, specification 27-08021 on VAF's MC 29716, dated 4-8-59, MC 33612, dated 6-17-59 and MC 37720, dated 9-17-59. Two samples were tested. (11-61) Item was tested to C revision of the specification. Present specification is revision D. The D revision added vendor and vendor part number.	Complete Oct. 1959		
		QCDI									

MERCURY TEST SUMMARY				PNEUMATICS				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD		QUAL BY	REMARKS	TEST SCHED	
			APPR	INSTL			START	COMPL
27-08115-1	77D	Sphere - Helium			PPT	(5/61)	Completed	
27-08115K	88D	Storage, Missileborne				The 27-08115-1 sphere was preproduction tested (Wyle Test Reports 6117, 6141, 6294).	Oct. 1959	
Airite Products	93D					GD/A design group approved testing for the 27-08115-1 sphere in VAP MC 39194, dated 10-19-59.		
6314	100D					Specifications 27-08115 and 7-00209B have different vibration requirements. This requirement difference is covered by report AS-7-005A, Missile Structural Design Criteria. Approval was requested on 1-5-59 and granted per BMC letter LBCR-JMP-jkh, dated 3-18-59.		
	103D					Three samples were tested.		
	107D					(11-61)		
	109D					Item was tested to J revision of this specification. Present specification is revision K. The K revision added vendor and vendor part number.		
	113D							
	130D							
	144D							
	152D							
	167D							
		QC DI						

MERCURY TEST SUMMARY										PNEUMATICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDE	INSTL				Completed	Completed	
27-08115-7 -- -- -- -- 27-08115K Airite Products 6320	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sphere - Helium Storage, Missileborne					PPT	(5/61) The 28-08115-7 Sphere was preproduction tested (Wyle Test Report 5959, unit S/Ns 5, 9, and 10). GD/A design group has approved testing of the 27-08115-7 Sphere per Specification 27-08115J in VAF 27-08115-7-1A-001, dated 2-17-61. Three samples were tested. (11-61) Item was tested to J revision of the specification. Present specification is revision K. Revision K added vendor and vendor part number.	Completed Feb. 1961		
27-08115		QC DI									

0-8

MERCURY TEST SUMMARY										
PNEUMATICS										
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	APPR				START	COMPL
27-08116-11 -- -- -- 27-08116D Robertshaw Fulton 1098-22001	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve - Shutoff, Motor Operated					BOS	(5/61) The 27-08116-11 valve was approved on basis of similarity to 7-08234-9 in VAF 40651, dated 12-59. Preproduction test results of 7-08234-9 were reported in Robertshaw Fulton Test Report 1098-R-1 and approved in VAF MC 25653, dated 1-22-59. The 27-08116-11 valve per specification change C was approved in VAF MC 52487, dated 12-59. (11-61) Item was approved per C revision of the specification. Present specification is revision D. Revision D added vendor name and vendor part number. MAD approved C revision of specification which deleted temperature-shock requirements and added a step to the temperature-humidity test. The added step was to do three steps of the proof cycle instead of the two originally required.	Completed Dec. 1959	
QC DI										

MERCURY TEST SUMMARY										INSTRUCTIONS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDE	INSTL						
27-08245-13 27-08245J 27-08101M (27-08101-25) B. H. Hadley Co. 10701-7	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Regulator Assembly - Pressure, Oxidizer Tank					BOS	(5/61) The 27-08245-13 (27-08101-25) regulator is specially tested but otherwise identical to the 27-08245-3 regulator. The 27-08245-13 regulators are selected for best transient response and maximum reliability for specific use on the Mercury program. Similarity of the 27-08245-3 regulator to the 27-08101-1 is established by VAF 41967. Two 27-08101-1 regulators were preproduction tested per Test Report numbers 1080 and 1081, and the results approved by VAFs 41254 and 41255, dated 12-7-59. (11-61) The item was approved per revision K of the specification. Revision M added vendor and vendor part number.	Completed Jan. 1960		
27-08245		QC DI									

MERCURY TEST SUMMARY										PNEUMATICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	Completed Jan. 1960	
			ENGR	IDE	APPR				START COMPL		
27-08246-11 27-08246K 27-08102K (27-08102-17) B. H. Hadley (o. 10705-7	77D 88D 93D 100D 105D 107D 109D 113D 130D 144D 152D 167D	Regulator Assembly - Pressure, Fuel Tank					ROS	(5/61) The 27-08246-11 regulator is specially tested but otherwise identical to the 27-08246-5 regulator. The 27-08246-11 regulators are selected for best transient response, and maximum reliability for specific use on the Mercury program . Similarity of the 27-08246-5 regulator to 27-08102-1 is established by VAF 41966. PPF of 27-08102-1 was approved by VAF 41256 per Test Reports 1082 and 1085, dated 10-12-59. Two units were tested. (11-61) Item was approved per H revision of the specification. Present specification is K revision. K change revised some temperature requirements and pressures, but all changes made requirements less severe than previously.			
		QCDI									

MERCURY TEST SUMMARY				PNEUMATICS				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGR	INSTL				START COMPL
27-08251-1 -- -- -- 27-08251E Menasco Mfg. 674000-501	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sphere - Helium Storage				PPT	(5/61) Three (S/N 86,88,96,) units of 27-08251-1 spheres were preproduction tested to the requirements of Specification 27-08251A per test reports A-218-1 and 8023. GD/A design group approved the testing of 27-08251-1 unit/Specification 27-08251A on VAF 46044, dated 3-22-60. (11-61) Item was tested per revision C of the specification. Present specification is E revision and has not changed testing requirements. (12-61) Item is interchangeable alternate for 27-08115-1.	Completed March 1960
		QCDI						

27-08251

MERCURY TEST SUMMARY										PNEUMATICS	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDF	INSTL				START	COMPL	
27-08575-1 27-08575A 27-08520B Walter Kiddie Co. 891314	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sphere - Pneumatic Pressure					PPT	(6-61) The 27-08575-1 Sphere was preproduction tested. Results were reported in TR 1045 Addendum and R 1336. GD/A design group approved the 27-08575-1 Sphere /Spec 27-08520 on VAF MC 25575 dated 1-17-59 and VAF MC 40798 dated 11-23-59. 			

MERCURY

MAJOR CRITICAL COMPONENTS

PROPULSION

All components listed in this section have been preproduction tested or qualified on the basis of similarity to previously qualified units.

MERCURY TEST SUMMARY				PROPULSION				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			REMARKS	TEST SCHED	
			ENGR	IDE	INSTL		START	COMPL
7-02229-15	77D	Valve, Fuel Discon-				(6/61)	Completed	
- - - -	88D	nect				One unit (serial number 16) qualified by	Dec.	
7-02229P	93D	(Forward Section)				Reaction Motors Inc.	1960	
Reaction Motors	100D					The preproduction test was recorded in		
Inc.	103D					Report 67 (addendum A and B) and 70, appen-		
311193	107D					dix A and B.		
	109D					CV/A design group approved VAF 49675 and		
	113D					7-02229-B-1A-001. The preproduction tests		
	130D					deviated from 7-00209B in vibration tests		
	144D					($2G \pm 10\%$ rather than $2G + 10\% - 0\%$) and		
	152D					the sand and dust test was performed to		
	167D					MIL-E-5272.		
		QC DI						

MERCURY TEST SUMMARY				PROPULSION					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	INSTL				START	COMPL
7-02281-15 7-02281E 7-02298M B.H. Hadley Co. 10576-15	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve, Sustainer Fuel Shutoff, Power Operated				0th	(5/61) Approved on the basis of similarity to vendor's P/N 10576 plus additional tests to procurement specification requirements. Valves differ only as noted on vendor drawing and VIR M7-3228. The change included an improved actuator and a change in the Restrictor Orifice CV/A design group approved the 7-02281-15 unit as noted on VAF MC 18607 and VIR M7-3228, dated 4-15-59. MAD disapproved on MAAF 00040B, 1-15-59. MAD increased requirements on the temperature to 200°F and specified helium gas temperature for use on test. No action was taken to change specifications on these items since these items are in excess of design requirements.	Completed April 1959	
		QC DI							

7-02281

MERCURY TEST SUMMARY				PROPULSION					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	ENGB IDE INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
								START	COMPL
7-02287-15 7-02287C 7-02297N B.H. Hadley Co. 10577-15	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve, Booster Fuel Shutoff, Power Operated				0th	(5/61) Approved on the basis of similarity to vendor's P/N 10577 plus additional tests to procurement specification requirements. Valves differ only as noted on vendor drawing and VIR M7-3227, which included an improved actuator and addition of vendors name on nameplate. CV/A design group approved 7-02287-15 unit as noted on VAF 18608 and VIR M7-3227, dated 4-7-59. Disapproved by MAD on MAAF 0039B. Specification conforms to items listed on MAAF except for high temperature required. No action taken to change this item on the specification since it is in excess of design requirements.	Completed April 1959	
		QCDI							

MERCURY TEST SUMMARY					PROPULSION					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL				START	COMPL
7-02315-3 - - - 7-02315H Airesearch Mfg. Co. 121020-1	77D 88D	Valve - Fill and Drain, Fuel					BOS	(5/61) Approved on basis of similarity to the 121020 Airesearch valve. The -3 has a strengthened butterfly and shaft and a lubricated seal. Proof of similarity submitted by vendor. Approved on VAF 24200, dated 9-20-60 by and VAF 46317, dated 9-20-60 by CV/A design group.	Completed July 1960	
7-02315		QC DI								

MERCURY TEST SUMMARY				PROPULSION				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGR	INSTL				START COMPL
7-22232-805	77D	Line Assembly,				BOS	(6-61)	Completed
- - - - -	88D	Sustainer, Fuel					Approved on the basis of similarity to the 7-22232-1 and -3. The -1 was qualified by design evaluation tests conducted on one specimen by GD/A tests laboratory. The tests are recorded in report 7A1231 dated 31 July 1958.	Aug
- - - - -	93D							1958
GD/A	100D							
7-22232-805	103D							
	107D							
	109D							
	113D							
	130D							
	144D							
	152D							
	167D							
		QC DI						

7-22232

MERCURY TEST SUMMARY					PROPULSION				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL			START	COMPL
7-23205-815	77D	Inlet Manifold,				PPT	(6-61)	Completed	June 1959
- - - - -	88D	Booster Liquid Oxygen					Approved on the basis of preproduction		
- - - - -	93D						tests conducted on two specimens by GD/A		
GD/A	100D						test laboratory. The tests are recorded		
7-23205-815	103D						in report 7A2085 dated 6-27-59.		
	107D								
	109D								
	113D								
	130D								
	144D								
	152D								
	167D								
		QCDI							

MERCURY TEST SUMMARY				PROPULSION				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPB			QUAL BY	REMARKS	TEST SCHED START COMPL
			ENGR	IDE	INSTL			
7-23419-801	77D	Inlet Manifold,				BOS	(6-61)	Completed Sept 1959
- - - - -	88D	Booster Fuel					Approved on the basis of similarity to the	
- - - - -	93D						7-23419-5, which was qualified by evalu-	
GD/A	100D						ation tests conducted on one specimen by	
7-23419-801	103D						GD/A test laboratory. The test was re-	
	107D						corded in report 7B 1665-1 dated 8-15-59	
	109D						and report 7B 1665-2 dated 9-12-59.	
	113D							
	130D							
	144D							
	152D							
	167D							
		QC DI						

MERCURY TEST SUMMARY				PROPULSION			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR INSTL ENG	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
							START COMPL
27-02102-829	77D	Valve Assembly, Fill			0th	(6-61) Approved on the basis of similarity to 27-02102-827 which was preproduction tested and used on D series missiles.	Completed Dec. 1960
- - - -	88D	and Drain, LO ₂				In addition, supplemental qualification tests were conducted on two 27-02102 829 units (serial numbers A and B) by A search. The -829 valve is similar to the -827 valve except a sealed metal box completely encloses the actuator; the electrical leads are potted; the actuator is rotated 180°; and the housing is cast.	
27-02102K	93D					Airsearch Test Report AE-7456-R covers the tests on the -829 valve and Test Report AE-7331-R covers the earlier test on the -827 part.	
Airsearch Mfg. Co.	100D					CV/A Design Group approved the valve on VAF 52217, dated 12-12-60.	
121072-1	103D					Deviations from 7-00209B are as follows: 1. Temperature, altitude and humidity. 2. Pressure reduced from 30 inches Hg. to 20.58 inches Hg. rather than 1 mm. Hg. 3. Four hour test at +40°F deleted.	
	107D					Tests added: 1. Pressure Drop and Dynamic Flutter. 2. Proof Pressure. 3. Flush and Purge System Test. 4. Airborne Valve Actuator Test. 5. Ground Support Valve Test.	
	109D					(Continued on next page)	
	113D						
	130D						
	144D						
	152D						
	167D						
		QCDI					

MERCURY TEST SUMMARY				PROPULSION						
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	ENGR	INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
									START	COMPL
27-02102-829 (Continued)								(Continued) Tests Added: 6. Burst Pressure Test 7. Low Temperature with LN ₂ test. 8. Storage Test. 9. Deflection Load Test.	Completed Dec. 1960	

27-02102

MERCURY TEST SUMMARY				PROPULSION			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	INITIALS ACTIVITY	NOMENCLATURE	MAD APPR ENGR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
							START COMPL
27-02248-1	77D	Valve-Booster,			PPT	(5/61)	Completed
- - - -	88D	Disconnect, L02				Qualified by preproduction tests conducted on 2 units, serial numbers 1 and 2, by Reaction Motors Inc. The preproduction test was recorded in Test Reports CMP 102, and appendices A, B, and C, and Test Report 1221-1.	March 1961
Reaction Motors Inc.	93D	(Forward Section)				CV/A design group approved PPT on 3-1-61. Tests performed deviated from book specification 27-02248D T-A-H requirements, paragraph 4.4.2.	
310722	100D						
	103D						
	107D						
	109D						
	113D						
	130D						
	144D						
	152D						
	167D						
		QC DI				(8-61) Test deviation was approved by VAF53587, dated 8-5-60.	

MERCURY TEST SUMMARY										PROPULSION	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
				ENGR	INSPE				INSTL	START	COMPL
27-21136-3		77D	Valve Assembly, Fuel Booster Disconnect (Aft Section)				PPT	(5/61) Qualified by GD/A test laboratory. Engineering evaluation and preproduction tests were conducted on 4 units (serial numbers A298-1, A298-2, -3 and -5). The PPT was recorded in Report 7A2324, dated 8-19-59.	Completed Aug. 1959		
- - -		88D									
- - -		93D									
GD/A		100D									
27-21136-3		103D									
		107D									
		109D									
		113D									
		130D									
		144D									
		152D									
		167D									
			QCDI								

MERCURY

MAJOR CRITICAL COMPONENTS

PROPELLANT UTILIZATION

None of the items in the propellant utilization system require further approval action prior to flight.

Testing on both liquid oxygen transducer assemblies is complete. The test report is being evaluated. These transducer assemblies are part of the propellant loading system and replace assemblies used on early D series missiles.

MERCURY TEST SUMMARY					PROPELLANT UTILIZATION				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	INSTL				START	COMPL
7-43011-817	77D	Manometer Assembly,				BOS	(10-61)	Completed	Dec 1959
27-04001	88D	Fuel					The 7-43011-504 was preproduction tested to 7-00209B requirements in accordance with test report 7B 2313-2, dated 12-2-59 and flight proof tested to 7-00210B requirements in accordance with test report 7B 2217-2, dated 8-11-59. The 7-43011-504 unit used a new housing assembly and was a reworked 7-43011-803 unit or essentially a -815 unit.		
GD/A	93D						Changes resulting in the -817 unit consisted of a mandrel connection to a "banana" plug and the use of PT201 acrylic resin coating inside the manometer housing.		
- - - -	100D						The 7-43011-817 unit has a successful flight history.		
	103D								
	107D								
	109D								
	113D								
	130D								
	144D								
	152D								
	167D								

MERCURY TEST SUMMARY				PROPELLANT UTILIZATION						
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	ENGR	IDR	INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
										START COMPL
7-43040-819	77D	Computer Comparator						BOS	(10-61)	Complete
- - - - -	88D								The 7-43040-801 was flight proof tested to 7-002108 requirements in accordance with test report 7B1699, dated 5-19-58. The -801 unit was tested to -4°F low temperature rather than -65°F (deviation referenced in test report 7B1699).	
27-04001	93D								Changes in the -801 assembly resulting in the -819 assembly consisted of a new potting compound to permit unit storage at -65°F instead of -4°F. Other changes consisted mainly of resistor changes to stabilize gains and adjust operating ranges, changes to accommodate APChE, and change of vendors on some components to effect greater reliability.	
GD/A	100D									
- - - - -	103D									
	107D									
	109D									
	113D									
	130D									
	144D									
	152D									
	167D									
									The 7-43040-819 unit has a successful flight history.	

MERCURY TEST SUMMARY				PROPELLANT UTILIZATION						
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL
			ENGR	IDE	INSTL				See Remarks	
27-04240-809	77D	Transducer Assembly -						(10-61) This unit is similar (structurally modified) to the -801 assembly, which was preproduction tested but failed shock and vibration tests, test report 27A126. The -809 unit will be qualified by similarity to the -801 unit plus proof cycle, shock, and vibration tests, all of which have been completed. The test report (27A1136) is being evaluated. The life test will be based on similarity to the -811 unit which is covered in this section. The 7-43021-813 unit was used on the 100D flight.		
27-04240E	88D	Liquid Oxygen								
27-04239C	93D									
GD/A	103D									
113-809100-1	107D									
	109D									
	113D									
	130D									
	144D									
	152D									
	167D									
		QC DI								

MERCURY TEST SUMMARY				PROPELLANT UTILIZATION				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPB			QUAL BY	REMARKS	TEST SCHED
			ENGR	IDE	INSTL			START COMPL
27-04240-811 27-04240-E 27-04239 C GD/A 113-811100-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer Assembly - Liquid Oxygen				OTH	(10-61) This unit is similar (structurally modified) to the -801 assembly, which was pre-production tested, test report 27A126 but failed shock and vibration tests. The -811 unit will be qualified by similarity to the -801 unit plus proof cycle, shock, vibration, and life tests, all of which have been completed. The test report (27A1136) is being evaluated.	See Remarks
QCDI								

MERCURY
MAJOR CRITICAL COMPONENTS
ELECTRICAL

The electrical system is composed of batteries, inverters, power changeover switch, distribution harnesses, and miscellaneous switches, relays, and connectors.

All items have been preproduction, flight proof tested, and/or approved on the basis of similarities, with exception of the harnesses and abort sensing relay.

The harnesses are fabricated to MIL-W-8160 specification requirements.

Flight proof testing on the abort sensing relay 27-61147-805 is complete and report is being prepared.

In some instances, where items have not conformed to MIL-I-6181B and MIL-I-26600 test requirements, deviation requests have been processed and submitted for AFBSD approval.

The noise generated by action of the thermostatic heater switches used in the missileborne batteries exceeds the limits (conducted interference, and radiated interference) of MIL-I-6181B and MIL-I-26600 test requirements. The battery heaters and the thermostatic heater switches are nonoperative during flight. During countdown operation the heaters cycle on and off at intervals of about 10 to 15 minutes; the excessive noise exists for less than one second, when switches open and close.

MERCURY TEST SUMMARY				ELECTRICAL				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
							START	COMPL
7-06345-5 7-06345 - - - Amphenol Corp. 200X-30-5004	77D 88D 93D 100b 107D 109D 113D 130D 144D 152D 167D 203D	Staging Receptacle, Propulsion			BOS	(5/61) The staging receptacle was approved based on similarity to 7-06345-3 (200X-30-4) receptacle which was preproduction tested. Design group approved the unit on VAF MC 7-06345-5-LA-001 dated 1-19-61.	Completed Jan. 1961	

7-06345

MERCURY TEST SUMMARY				ELECTRICAL				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGR	INSTL				START
27-06106-801	77D	Switch Assy, Power				Oth	(5/61)	Completed
- - - -	88D	Changeover				BOS		Oct.
27-06113-3	93D					&	Design group approved item based on simi-	1960
United Control	100D					FPT	larity to vendor P/N 963-1B (GD/A P/N	
1277-1A	103D						27-06177-1) which has been preproduction	
	107D						tested by vendor, ER 1640, dated 5-3-60.	
	109D						Flight proof tested by GD/A, Test Report	
	113D						27A-801R, dated 10-21-60.	
	130D						(12-61) NOTE	
	144D						See note under Kinetic switch 27-	
	152D						06106-801.	
	167D							

MERCURY TEST SUMMARY					ELECTRICAL					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL				START	COMPL
27-06106-801	77D	Switch Assembly,					PPT	(5-61)	Completed	March 1959
- - - -	88D	Power Changeover						Two specimens preproduction tested at GD/A (Test Report 7A1871R, dated 3-19-59).		
27-06113-3	93D							First specimen has been subjected to temperature, altitude, humidity, vibration, acceleration and life tests.		
Kinetic	100D							Second specimen has been subjected to RF, fungus resistance, sand and dust and salt atmosphere tests.		
M-160-4	103D							(12-61)		
	107D							NOTE		
	109D							In accordance with design group request only Kinetic switch is to be used on Mercury missiles.		
	113D									
	130D									
	144D									
	152D									
	167D									
		QCBI								

27-06106

MERCURY TEST SUMMARY				ELECTRICAL		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	CRIT COMP	QUAL BY	TEST SCHED
						START COMPL
27-06348-1	77D	TLM Battery,			FPT	Completed
- - - - -	93D	Lightweight				April
27-06348	100D					1961
Eagle Picher	103D					
MAR 4073	107D					
	109D					
	113D					
	130D					
	144D					
	152D					
	167D					
<p>(5-61) Flight proof tested by vendor. Test Report MAR 4073 dated April 1961. Missile Electrical Design Group has approved article LA-004, dated 5-8-61 for flight proof testing only.</p> <p><u>NOTE</u></p> <p>Deviation request, ECP-CAC-107A-334-80R2, dated 5-3-61 has been submitted to waive some of the test requirements of MIL-I-26600.</p>						
		QC DI				

MERCURY TEST SUMMARY				ELECTRICAL			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPE ENGR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
							START COMPL
27-06358-1	88D	Battery, TLM			FPT	(5-61) Electrical Design Group states that the specimen has been flight proof tested and test report has been reviewed and approved. NOTE: A deviation request ECP-CAC-107A-334-MOR2 has been submitted to waive some of the test requirements of MIL-I-6181.	See Remarks
- - - - - 27-06358 Eagle Picher Co. GAP-4067							

27-06358

MERCURY TEST SUMMARY										ELECTRICAL	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR INSTL			CRIT COMP	QUAL BY	REMARKS	TEST SCHED START COMPL	
27-06358-1 - - - - 27-06358 Yardney Corp. 1756		88D	Battery, TLM					FPT	(5-61) Seven specimens have been flight proof tested at GD/A. (Test Report number 7A42285, dated 7-27-59). NOTE: Battery is remotely activated. Seven batteries were required to accomplish the test. Deviation request, ECP CAC-107A-334-80R2. has been submitted to AFBMD to waive some test requirements of MIL-I-6181.	Completed July 1959	

MERCURY TEST SUMMARY				ELECTRICAL			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR IDR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
							START COMPL
27-06350-3 - - - - 27-06359 Yardney 1734		Battery Pack, Main Missile Power			PPT	(5-61) Preproduction tested by Associated Test Laboratory. Results reported in D432- 1237, dated 10-5-59. Deviation request, ECP CAC-107A-334-80R2 has been submitted to waive some of the test requirements of MIL-I-6181. <u>NOTE</u> TWX-BSBKK-17-7-45, dated 17 July 1961 from BSD to C. W. Blakey, deletes Yardney as a source for the main missile battery when it is used as flight article.	Complete

MERCURY TEST SUMMARY									
ELECTRICAL									
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGR	IDE	INSTL				START COMPL
27-61147-803	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Relay Installation, Abort Sensing					BOS	To be approved based on similarity to 27-61147-805 assembly which is being flight proof tested.	Not Required

MERCURY
MAJOR CRITICAL COMPONENTS
TELEMETRY

There are six items in this section. Five were approved based on similarity to previously qualified items. One item, the lightweight PLM package for 100D, was flight proof tested and approved.

A deviation, ECP CAC-107A-334-98, has been approved for all 27-12290 assemblies.

The 27-12290-807 no longer has effectivities on Mercury. All effectivities formerly listed under the -807 are now effectivities under the -809.

MERCURY TEST SUMMARY				TELEMETRY			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
							START COMPL
27-11541-865 - - - - 7-01658 Bendix - - - -	88D	TLM Package			BOS	(5-61) Approved based on similarity to -1 which has been flight proof tested plus additional life test with modified commutator motor installed. Partially meets MIL-1-6181 test requirements. Similarity approved by Design Group.	Completed

MERCURY TEST SUMMARY				TELEMETRY					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPE	ENGR IDE INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
								START	COMPL
27-111616-829 - - - - 27-01216 GD/A 27-111616-829	88D	TLM, Accessory Package				BOS	(5-61) Approved based on similarity to 7-11310 which has been flight proof tested except for deviation from -65°F storage temperature. Partially meets MIL-1-6181 test requirements. Similarity approved by Design Group.	Completed	

27-111616

MERCURY TEST SUMMARY					TELEMETRY				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			QUAL BY	REMARKS	TEST SCHED	
			APPR	ENGR	INSTL			START	COMPL
27-12210-809 - - - - 27-01214 Bendix - - - -	100D	TLM Package, RF #2				BOS	(5-61) Approved based on similarity (change in the oscillator and lowered RF power output) to 27-11541 which has been flight proof tested. Partially meets MIL-I-6181 test requirements. Similarity approved by Design Group.	Completed	

MERCURY TEST SUMMARY				TELEMETRY				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			REMARKS	TEST SCHED	
			ENGR	IDE	INSTL		CRIT COMP	QUAL BY
27-12290-3	100D	TLM Package, Light Weight						
- - - - -						(10-61) Consists of a transmitter built by Texas Instruments and a signal conditioner built by GD/A. Both have been separately flight proof tested to 7-00210B except for a low temperature test requirement of -30°F, and a non-operating test at 0°F.		Complete
27-01214 GD/A						(10-61) The signal conditioner exceeded the limits of conducted interference and audio frequency conducted susceptibility per MIL-1-26600. A deviation request, ECP CAC-107A-334-98 (CCN 1302 for -4 contract; CCN 663 for -299 contract; CCN 74 for -635 contract; CCN 58 for -699 contract), has been approved for all 27-12290 assemblies.		
27-12290-3						Testing has been completed and the report has been reviewed and approved.		

MERCURY TEST SUMMARY					TELEMETRY				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	INSTL				START	COMPL
27-12290-803 - - - - - 27-01214 GD/A 27-12290-803	93D	TLM Package, light weight				BOS	(10-61) Approved based on similarity to 27-12290-3, which was flight proof tested. (Refer to -3 remarks). Similar to 27-12290-3 except for rework of transmitter and IF filter to change frequency.	Complete	

MERCURY TEST SUMMARY

TELEMETRY

EFFECTIVITY		QUALIFIED BY		REMARKS	TEST SCHEDULE
PART NUMBER	SPEC CONTROL	NOMENCLATURE			
27-12290-809		77D TLM Package -	BOS	(10-61) (12-61)	START COMPL
- - - -		103D Light Weight			Complete
27-01214		107D		Approved based on similarity to 27-12290-3, which was flight proof tested. (Refer to -3 remarks)	
GD/A		130D			
27-12290-809		144D		Similar to 27-12290-3 except for rework of transmitter and RF filter to change frequency. The shockmounts were also changed from the spring-type to hard rubber.	
		152D			
		167D			
		109D			
		113D			

MERCURY

MAJOR CRITICAL COMPONENTS

RANGE SAFETY

This section covers a command set, arming device, destructor, three-second destruct delay unit and power and signal control unit.

All items have been preproduction tested, flight proof tested and/or approved on the basis of similarity to units that have been tested.

MERCURY TEST SUMMARY				RANGE SAFETY				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD		QUAL BY	REMARKS	TEST SCHED	
			APPR	INSTL			START	COMPL
27-04306-3 27-04306A (27-04230F) Beckman and Whitley 175-9D-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	RSC, Destruct Unit			0th	(8-61) Approved on basis of similarity to 7-04237 per Article LA 27694A, dated 5-7-59, and VAF MC 31,407, dated 5-8-59. Additional tests consisting of shock, operating vibration and operating acceleration have been performed at GD/A as reported in Test Report 7A1822. NOTE: Deviation request, ECP-CAC 107A-334-36 has been submitted to waive some of the test requirements of MIL-I-26600. The deviation request has been approved only for Contract AF 04(647) -299 by CCN 253, MSN 61, BMC-61.	Completed	
		QCDI						

MERCURY TEST SUMMARY				RANGE SAFETY					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	ENGR	INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
									START
27-36014-1	77D	Command Set, Range Safety					FPT	(5-61)	Completed
- - - - - (7-03241) GD/A	88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D							Limited flight proof tested. Modified module in audio section of GFE P/N 319600, MARK I has only been vibration tested. Modification decreases gain by a factor of three (3) and increases linearity.	
27-36014-1								Testing approved by Design Groups.	

27-36014

RANGE SAFETY										
MERCURY TEST SUMMARY										
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL				START	COMPL
27-36244-1 - - - - (27-03008-3) GD/A 27-36244-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Arming Device, RSC					PPT	(5-61) One specimen has been preproduction tested at GD/A as reported in Test Report No. 7A2055, dated 6-8-59. Test report has been reviewed and approved by cognizant engineers. Deviation request, ECP - CAC-107A-334-133, has been submitted to waive the test requirements of MIL-I-26600. <u>NOTE</u> (a) Facility equipment could not attain operating altitude of 1.0 mm of Hg. Altitude attained was 1.5 mm of Hg. (b) Shipping vibration omitted because of lack of shipping container. (c) Toggle switches replaced by single-pole knife switches.	Complete	
		QCDI								

MERCURY TEST SUMMARY				RANGE SAFETY				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	ENGR ID INSTL	CRIT COMP	QUAL BY	TEST SCHED	
							START	COMPL
27-36236-801	77D	Control Unit,				FPT		Completed
- - - - -	88D	Power and signal						
- - - - -	93D							
GD/A	100D							
27-36236-801	103D							
	107D							
	109D							
	113D							
	130D							
	144D							
	152D							
	167D							
		QC DI						

27-36236

MERCURY TEST SUMMARY					RANGE SAFETY				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGB	IDE	INSTL				START COMPL
27-36277-1	77D	Delay Unit, Three-					0th	(8-61) Unit underwent search for critical weakness test. All tests have been performed including RF tests. Test results are being evaluated. This unit supercedes 27-36256-3, which was used on 100D missile.	Complete
- - - - (27-01175) GD/A	88D 93D	Second Destruct						(12-61) Deviation request, ECP-107A-334-127 has been submitted to waive some of the radiated and conducted test requirements of MIL-I-26600.	
27-36277-1	103D 107D 109D 113D 130D 144D 152D 167D							Report has been reviewed and approved.	

MERCURY

MAJOR CRITICAL COMPONENTS

AZUSA

All transponders have been delivered to AFMTC by General Dynamics/Astronautics. The transponders are now GFE items and GD/A has no control of the various configurations.

Two specimens of the basic unit, 26-10002-1, were flight proof tested. One unit was subjected to temperature, altitude, humidity, vibration, acceleration, and shock tests. The other unit was subjected to life and RF tests. Phase-lock and klystron failures were encountered but were corrected, and the test requirements were met. The various dash number configurations consist of modifications of the crystal filter characteristics, and the units are approved based on similarity to the basic unit.

MERCURY TEST SUMMARY										AZUSA	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	INSTL				START	COMPL	
26-10002-1 thru -815 AZD 26-001 (Component Spec.) GD/A 26-10002-1 thru -815	*	Transponder, B-Coherent					BOS	(5-61) * GD/A has delivered all transponders to AFMTC thus they became GFE items. GD/A has no control of dash numbers assigned for specific Mercury missiles. All dash numbers through -815 are approved on the basis of similarity to -1 which has been flight proof tested. (See Test Report 7A1766K, dated 12-17-58 and AZN-26-050, dated 9-10-58) The major change among various dash numbers is the use of a crystal filter. Two specimens have been tested. S/N 189 has been subjected to temperature, altitude, humidity, vibration, acceleration, and shock tests. S/N 174 has been subjected to RF and life tests. <u>NOTE</u> Specimens failed to meet phase lock parameter requirements during temperature (+120°F), vibration, acceleration, and life tests. The klystron failed during the acceleration test. Specimens were readjusted or repaired and testing was repeated until it passed the test requirements.		Completed	

MERCURY
MAJOR CRITICAL COMPONENTS
ABORT SENSING AND IMPLEMENTATION

None of the abort sensing and implementation system components require further action or approval.

MERCURY TEST SUMMARY				ABORT SENSING AND IMPLEMENTATION					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	INSTL				START	COMPL
27-11111-825 - - - - - 27-00210B GD/A 27-11111-825	100D	Abort Sensing and Control Unit				FPT	(10-61) This unit was flight proof tested to the requirements of 7-00210B by the GD/A test labs per test request number 27A1271. The following tests were performed: 1. Temperature-Altitude-Humidity a. Temperature extremes; -65°F, +160°F. b. Altitude extreme; 1 mm Hg c. Humidity; 95% 2. Vibration a. 8g maximum 3. Acceleration a. +10g, -2g; longitudinal axis b. +3g, mutually perpendicular axes.	Completed April 1961	

MERCURY TEST SUMMARY										ABORT SENSING AND IMPLEMENTATION			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED			
				ENGR	IDE	INSTL				START COMPL	TEST SCHED		
27-11111-831 - - - - - GP A		88D	Abort Sensing and Control Unit					BOS	(5 61) Approved based on similarity to the -825 unit. The changes on the -825 unit resulting in a -831 unit consist of the addition of suppression diodes across the relay coils, harness routing controls, and mounting change eliminating a mechanical interference. Two specimens of this unit are being subjected to reliability testing.	Completed April 1961			

27-11111

MERCURY TEST SUMMARY					ABORT SENSING AND IMPLEMENTATION					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	APPR				START	COMPL
27-111111-835 - - - - 7-00210B GD/A 27-111111-835	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Abort Sensing and Control Unit					BOS	(10-61) Approved based on similarity to the -825 unit. The changes on the -831 unit resulting in the -833 unit consist only in the use of "blue dot" transformers and decreasing the length of the magnetic amplifier mounting studs. The changes to -833 for the -835 consist of using fiber washers for motor mountings, replacing two diodes with resistors, and changing two resistance values in the magnetic amplifier null voltage suppression circuit. The circuit changes prohibit high null voltage output which would prevent drop-out of the capsule fail detection relays in case of an abort. A deviation request, ECP CAC-107A-344-102 (CCN 1336 for -4 contract; CCN 722 for -299 contract; CCN 86 for -635 contract; CCN 71 for -699 contract), has been approved for all 27-11111 assemblies.	Completed April 1961	

MERCURY TEST SUMMARY										ABORT SENSING AND IMPLEMENTATION			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR IDE INSTL			CRIT COMP	QUAL BY	REMARKS	TEST SCHED START COMPL			
27-11814-3		77D	Valve, Constant Flow					BOS	(10-61) Approved based on similarity to 27-04314-1 which was qualified for use on the D and E series P/U system. The valves differ only in calibration. The -1 was calibrated for a flow rate of 7.0 ± 1.0 SCFH; the -3 was calibrated for a flow rate of 14 ± 1.0 SCFH.	Completed			
- - - - - 27-04314C W.O. Leonard 128650-7		38D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D											
27-11814			QCDI										

MERCURY TEST SUMMARY				ABORT SENSING AND IMPLEMENTATION						
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS		TEST SCHED	
			ENGR	INSTL			START	COMPL		
87-44900-357	77D	Switch, Pressure,				0th	(5-61)	This item is a modified commercial part. Twelve units were evaluation tested at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 25 cps) Acceleration (16 to 35G's, 25 to 2000 cps) (10G's, all axes)	Completed Sept. 1960	
- - - -	88D	Booster Fuel Injection								
- - - -	93D	Manifold (470 psid)								
Bourns Labora-	100D									
tries	107D									
71731-0-4.7-000	109D									
	113D									
	130D									
	144D									
	152D									
	167D									
	103D									
		QCDI								

MERCURY TEST SUMMARY				ABORT SENSING AND IMPLEMENTATION						
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDF	INSTL				START	COMPL
87-44900-358	77D	Switch, Pressure,					0th	(5-61)		
- - - - -	88D	Sustainer Fuel						This item is a modified commercial part.		
- - - - -	93D	Injection Manifold						All six units successfully passed evaluation tests performed at GD/A per 27A419, dated 0-1-60. The following tests were performed:		
Bourne Laboratories	100D	(560 psia)						Temperature (-65°F, 2 hrs)		
71732-0-5.6-000	103D							(+165°F, 2 hrs)		
	107D							(.25 in., 10 to 25 cps)		
	109D							(16 to 35G's, 25 to 2000 cps)		
	113D							Acceleration (10G's, all axes)		
	130D									
	144D									
	152D									
	167D									
87-44900-358		QC DI								Completed Sept. 1960

MERCURY TEST SUMMARY			ABORT SENSING AND IMPLEMENTATIONS						
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	INSTL				START	COMPL
87-44900-359	77D	Switch, Pressure, Sustainer Hydraulic (2000 psia)				0th	(5-61) This item is a modified commercial part. All six units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in, 10 to 25 cps) (16 to 35G's, 25 to 2000 cps) Acceleration (10G's, all axes)	Completed	Sept. 1960
- - - - -	88D								
- - - - -	93D								
Bourns Laboratories	100D								
71733-0-20-000	103D								
	107D								
	109D								
	113D								
	130D								
	144D								
	152D								
	167D								
		QCDI							

MERCURY TEST SUMMARY				ABORT SENSING AND IMPLEMENTATION				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			REMARKS	TEST SCHED	
			ENGR	IDE	INSTL		START	COMPL
87-44900-372	88D	Switch, Pressure, LO ₂				(10-61) This item is a modified commercial part. Six units were evaluation tested at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8G's, 18 to 2000 cps) Acceleration (10G's, all axes)	Completed	Sept. 1960
- - - - - Bourns labora- tories 50954-0-21.5-000	100D	Tank Ullage (21.5 psid)				NOTE Two of the six units failed in test. One unit had a contact failure at -65°F. After repair, the unit de- veloped heavy wiper lift-off around the switching point during X axis vibration. The other unit developed heavy wiper lift-off during Z axis vibration. The unit was repaired and retested and no malfunctions occurred. This unit replaced by 87-44900-556 for the remaining effectivities.		
		QC DI						

87-44900-372

MERCURY TEST SUMMARY				ABORT SENSING AND IMPLEMENTATION			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR	CRIT COMP	QUAL BY	REMARKS	TEST SCHED
							START
87-44900-374 - - - - - - - - Bourns Labora- tories 50936-0-11-000	88D 100D	Switch, Pressure, Booster Cut-off, LO ₂ Tank (11.0 psid)	ENG IDE INSTL		0th	(10-61) This item is a modified commercial part. All three units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8G's, 18 to 2000 cps) Acceleration (10G's, all axes) This unit replaced by 87-44900-355 for the remaining effectivities.	Completed Sept. 1960
		QC DI					

MERCURY TEST SUMMARY				ABORT SENSING AND IMPLEMENTATION					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE				INSTL	START
87-44900-496	77D	Switch, Pressure, Pro-				BOS	(5-61)	Completed	Sept. 1960
- - - - -	88D	pellant Differential					This item is a modified commercial part.	Completed	
- - - - -	93D	(2.5 psid)					It is approved based on similarity to the		
Servonic Instru-	100D						-354 (P-20-1) unit except for a pressure		
ments	103D						setting of 2.5 psid instead of 4.0 psid.		
P-20-4	107D						All six -354 units passed evaluation tests		
	109D						performed at GD/A per 27A419, dated		
	113D						9-1-60. The following tests were per-		
	130D						formed:		
	144D						Temperature (-65° F, 2 hrs)		
	152D						(+165° F, 2 hrs)		
	167D						(.25 in., 10 to 18 cps)		
							Vibration (8G's, 18 to 2000 cps)		
							Acceleration (10 G's, all axes)		
87-44900-496		QCDI							

MERCURY TEST SUMMARY										ABORT SENSING AND IMPLEMENTATION			
PART NUMBER SPEC CONTROL PBOC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL			
			ENGR	TEST	IDE				TEST SCHED				
87-44900-356	77D	Switch, Pressure, LO2 Tank Ullage (21.5 psid)					0th	(10-61)	Complete Sept. 1961				
- - - - -	93D							is item is a modified commercial part.					
- - - - -	103D							six units were evaluation tested at GL/A					
- - - - -	107D							per 27A419, dated 9-1-60. The following					
Servonic Instru-	109D							tests were performed:					
ments, Inc.	113D							Temperature (-65°F, 2 hrs)					
P-20-3	130D							(+165°F, 2 hrs)					
	144D							Vibration (.25in., 10 to 18 cps)					
	152D							(8g, 18 to 2000 cps)					
	167D							Acceleration(10g, all axes)					
								NOTE					
								Two of the six units failed in test. One					
								unit exhibited intermittent high resist-					
								ance and broke contact between 5 to 15 psi.					
								The unit was repaired and retested but					
								did not operate properly.					
								The second unit shifted to 28 psid at					
								-65°F and remained at this point when back					
								at ambient. The unit was repaired and then					
								successfully tested.					
								Search for critical weakness tests have					
								been completed. 1,000 hour life test was					
								completed 9-29-61. Component was					
								successfully open-loop tested on 88D.					
								This part replaces 87-44900-372, due to					
								increased reliability level.					

MERCURY TEST SUMMARY				ABORT SENSING AND IMPLEMENTATION					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	INSTL				START	COMPL
87-14900-355 - - - - - - - - Servonic Instru- ments, Inc. P-20-2	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Switch, Pressure, Booster Cutoff, L02 Tank (11.0 psid)				0th	(10-61) This item is a modified commercial part. All three units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8g, 18 to 2000 cps) Acceleration (10g, all axes) Search for critical weakness test have been completed. 1,000 hour life test was completed 9-24-61. Component was successfully open-loop tested on 88D This part replaces 87-44900-374 due to increased reliability level.	Complete Sept. 1961	
		QC DI							

MERCURY
MAJOR CRITICAL COMPONENTS
AUTOPILOT

None of the items in the Autopilot section require further approval action prior to flight. FPT tests on the gyro rate and displacement group and the remote rate group have been completed and the preproduction test is in progress. These assemblies contain gyros with spin motor rotation detectors. Preproduction testing on the new displacement gyros is in progress. Flight proof tests are complete and preproduction tests are in progress on the new rate gyro.

The alternate vendor for 27-04204-1, 27-04205-1, 27-04208-1, 27-04209-1 and 27-04211-1 have been eliminated as sources for these items; therefore, these items have been removed from this report.

MERCURY TEST SUMMARY					AUTOPILOT			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGR	INSTL				START COMPL
7-04250-1 7-04250G - - - - Kearfott Corp. T2506-1A	100D	Gyroscope - Displacement				PPT	(5-61) This unit was tested to 7-00209B requirements per GD/A report number 27A150 dated 3-12-60.	Completed May 1960
		QCDI						

27-04250

MERCURY TEST SUMMARY

AUTOPILLOT

EFFECTIVITY		QUALIFIED BY	REMARKS	TEST SCHEDULE
PART NUMBER	NOMENCLATURE			START COMPL
7-04250-5	88D Gyroscope -	BOS	(10-61) (12-61)	Complete
7-04250G	Displacement			May
7-04265G				1960
Kearfott Corp			To be approved based on similarity to 27-04250-1, which was preproduction tested.	
T2506-2A			The 27-04250-1 was tested to 7-00209B requirements per GD/A test report Number 27A150.	

MERCURY TEST SUMMARY										AUTOPILLOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDE	INSTL						
27-04204-1	77D	Transducer-Feedback, Linear					PPT	(5-61) One 27-04204-1 unit was tested to Specification 27-04216F by Crescent Corp. and test results reported in Test Report 25-220, dated 12-58. Autopilot design group approved the 27-04204-1 tests on VAF MC 25 668, dated 2-27-59. (11-61) Eight specimens were subjected to search-for-critical-weakness tests and no failures were experienced. However, slight out-of-tolerance conditions were noted in all specimens.	Completed	Feb. 1959	
27-04204E	88D										
27-04216F	93D										
Crescent Corp.	100D										
HC-65-P-4E	103D										
	107D										
	109D										
	113D										
	130D										
	144D										
	152D										
	167D										
		QCDI									

27-04204

MERCURY TEST SUMMARY				AUTOPILLOT				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
							START	COMPL
27-04205-1 27-04205D 27-04213D Crescent Corp. HC-106-4E	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer-Feedback, Linear			BOS	(5-61) The 27-04205-1 unit (Crescent Corp.) was approved based on similarity to 7-04214 (HC44-4E) and 7-04215 (Crescent HC65-4E) and test report on 7-04242-1 (Crescent HC25-207) test report E-333. The 27-04205-1 was electrically similar to 7-04214 and 7-04215 and mechanically similar to 7-04242-1. Autopilot design group approved the 27-04205-1 based on similarity on VAF MC 17,120, dated 7-3-58.	Completed July 1958	

27-04205

MERCURY TEST SUMMARY										AUTOPILLOT	
PART NUMBER SPEC CTRL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	INSTL				START	COMPL	
27-04206-1	77D	Valve-Flow, Limiter,					PPT	(5-61)	Completed	Dec. 1958	
27-04206C	88D	Hydraulic						One 27-04206-1 unit was tested to specification 27-04218A by Sterer Corp. and reported in test report 13000.			
27-04218D	93D							Autopilot design group approved the 27-04206-1 on VAF MC 22873, dated 12-1-58.			
Sterer	100D							(11-61)			
13000	103D							Specification was revised to D revision.			
	107D							The specification revisions require more severe fluid temperature and proof cycle tests.			
	109D							Ten specimens were subjected to search-for-critical-weakness tests and no failures were experienced. However, slight out-of-tolerance conditions were noted in all specimens.			
	113D							The fluid temperatures experienced during the third level of the search-for-critical-weakness tests are in excess of the revised (Revision D) requirements for the 27-04206-1 valve.			
	130D										
	144D										
	152D										
	167D										
		QCDI									

MERCURY TEST SUMMARY			AUTOPILOT		TEST SCHEDULE
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	QUALIFIED BY	REMARKS	
27-04208 1 27-04208D 27-04215G Cadillac Gage Co. FC26-398A	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve - Servo, Electro-Hydraulic Sustainer	BOS	(5-61) The 27-04208-1 unit was approved based on similarity to GD/A 7-08369-1 as reported in Burst and Qualification Test Report CG 6-20. Autopilot design group approved the 27-04208-1, based on similarity to 7-08369-1 on VAF MC 37276, dated 9-3-59. (11-61) Specification was revised to G revision which incorporates higher temperature requirements. The 27-04208-1 servo valve has performed satisfactorily at temperatures in excess of the revised temperature requirements during search-for-critical-weakness tests.	Complete Sept. 1959
		QCDI			

MERCURY TEST SUMMARY										AUTOPILOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDE	INSTL						
27-04209-1	77D	Valve - Servo,					BOS	(5-61)		Complete Nov. 1958	
27-04209D	88D	Electro-Hydraulic						The 27-04209-1 valve was approved on basis of similarity to 7-08353-3 which was pre-production tested.			
27-04212H	93D							The 7-08353-3 valve was tested by Cadillac and reported in test Number CG 6-19. Report was approved on VAF MC 21969, dated 11-13-58.			
Cadillac Gage	100D							Autopilot design group approved the 27-04209-1 valve on VAF's MC 21971 and MC 21969, dated 11-1-58.			
FC-26-397A	103D							(11-61)			
	107D							Specification was revised to H revision, which incorporates higher temperature requirements.			
	109D							The 27-04209-1 servo valve has performed satisfactorily at temperatures in excess of the revised temperature requirements during search-for-critical-weakness tests.			
	113D										
	130D										
	144D										
	152D										
	167D										
		QC DI									

MERCURY TEST SUMMARY				AUTOPILOT					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL			START	COMPL
27-04211-1	77D	Transducer -				PPT	(5-61)	Completed	Jan. 1959
27-04211E	88D	Feedback, Linear					The 27-04211-1 unit was tested to specification 27-04217D by Crescent Corp. and reported in Test Report 25-221.		
27-04217H	93D						Autopilot design group approved the 27-04211-1 unit on VAF MC 25,074, dated 1-8-59.		
Crescent Corp.	100D						(11-61)		
HC-67P-4E	103D						Specification was revised to H revision.		
	107D						The significant revision to the specification was the addition of MIL-I-26600 requirement for RF noise testing.		
	109D								
	113D								
	130D								
	144D								
	152D								
	167D								
27-04211		QCDI							

MERCURY TEST SUMMARY				AUTOPILOT				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGR	INSTL				START COMPL
27-04301-1 27-04301D 27-04313E Minneapolis- Honeywell JRT 114	88D 100D	Rate Gyro, Autopilot				PPT	(8-61) This unit replaces 27-41709. Testing by GD/A on Test number 27A906 is complete. The report was reviewed and approved, but has since been disapproved. This unit has been replaced by 27-04574-1 and no additional testing is planned.	See Remarks

27-04301

MERCURY TEST SUMMARY										AUTOPILOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	INSTL				START	COMPL	
27-04574-3 27-04584B 27-04313E Boston Division Minneapolis- Honeywell JRS-101	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Rate Gyro, Autopilot					ppt	(6-61) This gyro contains spin motor rotation detectors. Testing is to be performed by GD/A on Test number 27A956 per specification 27-04313 "E". This unit replaces 27-04301-1. Testing is in progress. The flight proof testing is completed and the pre-production test is scheduled to be completed in November.	In Prog.	Nov. 1961	
		QCDI									

MERCURY TEST SUMMARY				AUTOPILOT				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGR	INSTL				START COMPL
27-41001-951	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Programmer- Electronic, Autopilot				BOS	(6-61) Approved based on similarity to the 27-41001-837 unit, which was preproduction tested to 7-00209B requirements on 7A2248 dated 9-17-59. Some deviations to MIL-I-26000 requirements have been approved; Reference ECP. No: CAC-107A-334-47 and CCN-532. Approximately 90% of the changes from the -837 unit to the -939 unit consist of programming changes. The remaining changes consist of different components such as transistors and the addition of transient suppression diodes.	Completed Sept 1959

27-41001

MERCURY TEST SUMMARY					AUTOPILLOT				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE				START	COMPL
27-41002-859	77D	Gyroscope Group, Rate and Displacement				BOS	(10-61) Approval to be based on similarity to 27-45202-801, which will be preproduction tested for E series missiles. The assembly contains gyros with spin motor rotation detectors. Testing on the 27-45202-801 is in process. Flight proof testing is complete, and preproduction testing is scheduled for January 1962 completion.	In Prog.	Jan. 1962
- - - - -	93D								
- - - - -	103D								
GD/A	107D								
- - - - -	109D								
	113D								
	130D								
	144D								
	152D								
	167D								
		QCDI							

MERCURY TEST SUMMARY										AUTOPILOT							
PAR: NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY		NOMENCLATURE		MAD APPR ENGR INSTL		CRIT COMP		QUAL BY		REMARKS		TEST SCHED START COMPL		Not Required	
27-41330-805		77D		Power Group -						OTH		(5-61)					
- - - - -		88D		Gyroscope, Autopilot								This assembly is not tested at this level. It is a part of the gyroscore groups 27-45302-1, 27-45302-803, and 27-41002-859.					
- - - - -		93D										Special developed vendor items in this assembly are subject to test.					
GD/A		100D															
- - - - -		103D															
		107D															
		109D															
		113D															
		130D															
		144D															
		152D															
		167D															

MERCURY TEST SUMMARY				AUTOPLOT					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL
			ENGR	INSTL					
27-41331-5 - - - - - - - - GD/A - - - -	88D 100D	Gyroscope Group - Displacement, Autopilot				OTH	(5-61) This assembly is not tested at this level. It is a part of the gyroscope groups 27-45302-1 and -803. Special developed vendor components in this assembly, such as the gyros, are subject to test.	Not Required	
		QC DI							

MERCURY TEST SUMMARY										AUTOPILLOT		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		FUNCTIONALITY		NOMENCLATURE		MAD APPR		CRIT COMP		QUAL BY	REMARKS	TEST SCHED
27-41331-803		77D		Gyroscope Group -		ENGR				0th	(10-61) This assembly is not tested at this level It is a part of the gyroscope group 27-41002-859. Special developed vendor components in this assembly, such as the gyros, are subject to test.	Not Required
- - - - -		93D		Displacement,		TEST						
- - - - -		103D		Autopilot		MGR						
GD/A		107D				APP						
- - - - -		109D										
		113D										
		130D										
		144D										
		152D										
		167D										

MERCURY TEST SUMMARY										AUTOPILOT	
PART NUMBER		EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL
SPEC CONTROL	PROC SPEC			ENG	ID	INSTL				Not Required	
VENDOR NAME											
VENDOR P/N											
27-41332-5		88D 100D	Gyroscope Group - Rate, Autopilot					OTH	(5-61) This assembly is not tested at this level. It is a part of the gyroscope groups 27-45302-1 and -803. Special developed vendor components in this assembly, such as the gyros, are subject to test.		Not Required
- - - - -											
- - - - -											
GD/A											
- - - - -											

27-41332

MERCURY TEST SUMMARY										AUTOPILOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPE INSTL			CRIT COMP	QUAL BY	REMARKS	TEST SCHED START COMPL	
27-41332-811 - - - - - GD/A - - - - -		77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Gyroscope Group - Rate, Autopilot					0th	(10-61) This assembly is not tested at this level. It is a part of the gyroscope group 27-41002-859. Special developed vendor components in this assembly, such as the gyros, are subject to test.	Not Required	
			QCDI								

MERCURY TEST SUMMARY				AUTOPHLOT					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			APPR	ENGR				START	COMPL
27-41333-5 - - - - - GD/A - - - - -	100D	Power Supply Component - Amplifier, +30V., Gyro Group				OTH	(5-61) This assembly is not tested at this level. It is a part of the gyroscope group 27-45302 -1. Special developed vendors items in this assembly are subject to test.	Required	Not
		QC DI							

MERCURY TEST SUMMARY										AUTOPILOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
				ENGR	IDE	INSTL				START	COMPL
27-41333-801 - - - - - - - - GD/A - - - -		88D	Power Supply Component Amplifier, +30v, Gyro Group					0th	(10-61) This assembly is not tested at this level. It is a part of the gyroscope group 27-45302 -803. Special developed vendor items in this assembly are subject to test.	Not Required	

MERCURY TEST SUMMARY										AUTOPILOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	APPR				START	COMPL	
27-41353-805	77D	Power Supply Component - Amplifier, + 50V., Gyro Group					OTH	(11-61) This assembly is not tested at this level. It is part of the Gyroscope group which has been qualified by preproduction testing. Special developed vendors items in this assembly are subject to test.	Not	Required	
- - - - -	93D										
- - - - -	103D										
GD/A	107D										
- - - - -	109D										
	113D										
	130D										
	144D										
	152D										
	167D										

MERCURY TEST SUMMARY										AUTOPILOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL	
			ENGR	IDE	INSTL						
27-41703-5	88D	Control Group -					BOS	(5-61)	Completed	May 1960	
- - - - -	100D	Autopilot, Rate Gyro						Approved based on similarity to -3 assembly which was preproduction tested on GD/A Test number 7A2334 dated 5-21-60.			
GD/A											
- - - - -											

27-41703-5

MERCURY TEST SUMMARY				AUTOPILOT					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL			START	COMPL
27-41703-809	77D	Control Group - Autopilot, Rate Gyro				PPT	(6-61) This assembly contains gyros with spin motor rotation detectors. Testing is to be performed by GIB/A on Test number 27-A1255. Testing in progress. FPT is complete and the preproduction test is scheduled to be complete in February.	In Feb. 1962	
- - - - -	95D								
- - - - -	103D								
- - - - -	107D								
- - - - -	113D								
- - - - -	130D								
- - - - -	144D								
- - - - -	152D								
- - - - -	167D								
- - - - -	109D								
		QC DI							

27-41703-809

MERCURY TEST SUMMARY										AUTOPILOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
				ENGR	IDE	APPR				START	COMPL
27-45300-3		100D	Servo Amplifier- Filter					BOS	(6-61) The unit is qualified on basis of similarity to the 27-41000-807 unit which was flight proof tested on CD/A test number 7A2247 and the 27-41000-813 unit which was preproduction tested on CV/A test number 27A766 dated 9-28-60. Some deviations to MIL-I-26600 requirements have been approved; reference WCP No. CAC-107A-334-59 and CCN-532. The 27-45300-3 unit differs from the tested units only in gain and filter changes.	Completed Sept 1960	
27-45300-3											

MERCURY TEST SUMMARY					AUTOPILOT				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
							START COMPL		
27-45301-3 - - - - - - - - - - CN/A - - - - -	100D	Programmer - Electronic, Autopilot			BOS	(6-61) Approved based on similarity to the 27-41001-837 unit which was preproduction tested to 7-00209B requirements on CN/A test number 7A2248 dated 9-17-59. Some deviations to MIL-I-26600 requirements have been approved; reference ECP No. CAC-107A-334-47. Approximately 90% of the changes from the 27-41000-837 to the 27-45301-3 consist of programming changes. The remaining changes consist of different components such as transistors and the addition of transient suppression diodes.	Completed Sept 1959		

27-45301-3

MERCURY TEST SUMMARY										AUTOPILLOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPE ENGR INSTL		CRIT COMP	QUAL BY	REMARKS	TEST SCHED START COMPL		
27-45302-1 - - - - - - - - - - GD / A - - - - -		100D	Gyroscope Group - Autopilot				90S	(6-61) Approved based on similarity to the 27-41002-805 assembly which was pre-production tested to 7-00209B per Test Report 7A2246 dated 6-7-60. Approved deviations consist of storage at -4°F instead of -65°F and operating acceleration test with spin motors disconnected. Changes from the 27-41002-805 to the 27-45302-1 unit consist only of wiring and gain changes. The rate gyros are not used for control but for ASIS instrumentation only. A remote rate gyro group has been added for control.	Completed June 1960		

27-45302-1

MERCURY TEST SUMMARY										AUTOPILLOT	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
				ENGR	IDF	INSTL				START	COMPL
27-45302-803 - - - - - - - - GD/A - - - -		88D	Gyroscope Group- Rate and Displacement					BOS	(10-61) Approved based on similarity to the 27-41002-803 assembly which was preproduction tested to 7-00209B per test report TA2246, dated 6-7-60. Approved deviations consist of storage at -10F instead of -65°F and operating acceleration test with spin motors disconnected. Changes from the 27-41002-805 to the 27-45302-803 unit consist only of wiring and gain changes. The rate gyros are not used for control but for ASIS instrumentation only. A remote rate gyro group has been added for control.	(complete)	

MERCURY

MAJOR CRITICAL COMPONENTS

SEPARATION

None of the items in the Separation System require further approval action prior to flight.

MERCURY TEST SUMMARY				SEPARATION				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			ENGR	INSTL				START COMPL
27-04304-3 27-04304A 27-04309A Conax Corpor- ation 2790A	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve Assembly, Explosive				BOS	(6-61) This item is similar to the -1 units which were tested to 7-00209B requirements by GD/A on 7-2245, dated 9-30-59. All 20 units tested met the requirements. The change revising the -1 assembly to a -3 assembly consisted of the addition of an "0" ring retainer.	Completed Nov. 1959
		QC DI						

MERCURY TEST SUMMARY				SEPARATION					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL
			ENGR	INSTL					
27-08575-1		Flask, Separation					(5-61) Refer to Pneumatics Section,		

27-08575

MERCURY
MAJOR CRITICAL COMPONENTS
ANTENNA

This section covers TLM/RSC, AZUSA, MOD III guidance antenna assemblies, TLM/RSC ring couplers and MOD III guidance wave guides.

Antennas and ring couplers have been tested and/or approved on the basis of similarity to qualified items.

AZUSA antenna is qualified on the basis of similarity to an antenna which was flight proof tested.

Standard VSWR measurement tests were performed on waveguide assemblies.

MERCURY TEST SUMMARY					ANTENNA		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD		QUAL BY	REMARKS	TEST SCHED
			APPR	ENGR			START COMPL
7-11500-3 - - - - (7-01203) GD/A 7-11500-3	100D	Ring Coupler, TLM			BOS	(6-61) Approved on the basis of similarity to 7-36044-1 which has been preproduction tested (Test Report 7A561, dated 6-3-57). RSC ring coupler has HN connectors and TLM ring coupler uses TN connectors.	Completed June 1957

MERCURY TEST SUMMARY										ANTENNA	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			CRIT COMP	QUAL BY	REMARKS	TEST SCHED		
			ENGR	IDE	APPR				START	COMPL	
7-36044-1	77D	Ring Coupler, RSC					PPT	(5-61)	Completed	June 1957	
- - - -	88D							One specimen has been preproduction tested at GD/A (Test Report 7A561, dated 6-3-57).			
7-01203	93D										
GD/A	100D										
7-36044-1	103D										
	107D										
	109D										
	113D										
	130D										
	144D										
	152D										
	167D										
		QCDI									

7-36014

MERCURY TEST SUMMARY										ANTENNA					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY		NOMENCLATURE		MAD APPR		CRIT COMP		QUAL BY		REMARKS		TEST SCHED START COMPL	
7-36044-5		109D		Ring Coupler, RSC						PPT		(10-61)		Completed	
- - - - -		113D													
7-01203		130D													
GD/A		144D													
7-36044-5		152D													
		167D													

MERCURY TEST SUMMARY					ANTENNA				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD			QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	APPR			START	COMPL
27-12507-3	77D	Antenna Assembly, TLM/RSC, (B-2 Pod)				BOS	(5-61)	Completed	
- - - - -	88D						Approved on the basis of similarity to the		
(27-01202)	93D						-1 unit which has been preproduction		
GD / A	100D						tested.		
27-12507-3	103D						Dash one and dash three are identical		
	107D						electrically as well as mechanically.		
	109D						Dash one is used on Pod-1 and dash three		
	113D						is used on Pod-2.		
	130D								
	144D								
	152D								
	167D								
27-12507		QCDI							

MERCURY TEST SUMMARY										ANTENNA	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N		EFFECTIVITY	NOMENCLATURES	MAD APPR		ENG	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START COMPL	
27-37000-1		77D	Antenna Assembly,					BOS	(5-61)	Completed Sept. 1960	
- - - - -		88D	Mod III Guidance						Approved on the basis of similarity to 27-36010-1 and 27-36008-1 which have been flight proof tested (Test Report numbers 27A2444, dated 10-11-60 and 7A2131, dated 9-6-60).		
- - - - -		93D									
GD/A		100D							Assembles into the 27-37005-1 assembly.		
27-37000-1											
QCDI											

27-37000

MERCURY TEST SUMMARY							ANTENNA	
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			QUAL BY	REMARKS	TEST SCHED
			ENGR	IDR	INSTL			START COMPL
27-37000-5	103D	Antenna Assembly,				BOS	(10-61)	Complete Sept. 1960
- - - - -	107D	MOD III Guidance					Approved on the basis of similarity to 27-36010-1 and 27-36006-1 which have been flight proof tested (Test report numbers 27A2444, dated 10-11-60 and 7A2131, dated 9-6-60).	
- - - - -	113D						Assembles into the 27-37005-3 assembly.	
GD/A	130D						The -5 is the same as -3 except that window 27-36002-3 is replaced by 27-36002-1.	
27-37000-5	144D							
	152D							
	167D							
								QC DI

MERCURY TEST SUMMARY					ANTENNA				
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	START COMPL
			ENGR	IDE					
27-61382-1	100D	Waveguide, Mod III Guidance (pulse beacon to antenna)				0th	(5-61) Validation testing has been conducted at GD/A Radiation Lab. No environmental testing is required.		Completed
- - - - -									
- - - - -									
GD/A									
27-61382-1									

27-61382

MERCURY TEST SUMMARY					ANTENNA			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR TEST ENG	CERT COMP	QUAL BY	REMARKS	TEST SCHED	
							START	COMPL
							27-61382-3 - - - - - - - - GD/A 27-61382-3	77D 88D 93D 103D 107D 109D 113D 130D 144D 152D 167D
		QCDI						

MERCURY TEST SUMMARY					ANTENNA			
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD		CRIT COMP	QUAL BY	REMARKS	TEST SCHED
			APPR	INSTL				START COMPL
27-61383-1		Waveguide, Mod III Guidance (Transition)				0th	(5-61) Validation testing has been conducted at GD/A Radiation Lab. No environmental testing is required.	Completed
- - - - -								
GD/A	100D							
27-61383-1								

[illegible]

MERCURY TEST SUMMARY				ANTENNA					
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR		CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	INSTL				START	COMPL
27-61384-1	77D	Wave Guide,				0th	(5-61)		Completed
- - - - -	88D	Mod III Guidance					Validation testing has been conducted at		
- - - - -	93D	(Structure to rate					GD/A Radiation lab. No environmental		
GD/A	100D	beacon)					testing is required.		
27-61384-1	103D								
	107D								
	109D								
	113D								
	130D								
	144D								
	152D								
	167D								
		QC DI							